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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,869	10/20/2000	William T. McHugh	08935-218001 / M-4926	6097

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EXAMINER	
MARTIN, ANGELA J	

ART UNIT	PAPER NUMBER
1745	9

DATE MAILED: 11/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk - 9

Office Action Summary

Application No.	Applicant(s)
09/692,869	McHugh et al.
Examiner	**Art Unit**
Angela J. Martin	1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Sep 20, 2002* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-8, 10-17, and 19-26* is/are rejected.

7) ☒ Claim(s) *9 and 18* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

This Office Action is responsive to the Amendment filed on September 20, 2002. The Applicant has overcome the rejection because at the time the claimed invention was made, the prior art of record, Hull, U.S. Pat. No. 6,265,104 B1, and the claimed invention were subject to an obligation of assignment to The Gillette Company. Thus, this Office Action is a second non-final rejection based on the following prior art.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Putt, U.S. Pat. No. 5,458,988.

Rejection of claims 1-8, 10-13 drawn to a battery.

Putt teaches a battery comprising a can having a rectangular cross section (col. 3, lines 39-41), the can having a cathode, an anode, and a separator between the cathode and anode (col. 4, lines 10-16); and a seal assembly attached to the open end of the can (col. 11, lines 40-51); air

access opening (col. 3, lines 39-44). It also teaches the cathode has a rectangular cross section (col. 7, lines 6-8; Fig. 2); the anode comprises zinc (col. 12, lines 45-56); the battery is a metal-air battery (col. 4, lines 60-64); a conductive hot melt material between the cathode and can (col. 10, lines 65-67 and col. 11, lines 1-12); and a barrier layer between the cathode and the can (col. 7, lines 15-21). Additionally, it teaches the can has a square cross section (a rectangle with all four sides equal; Fig. 2); the barrier layer comprises polytetrafluoroethylene (col. 1, lines 24-31); and an air plenum inbetween the cathode and the can (diffusion chamber; col. 1, lines 33-36).

Putt does not teach the cathode comprises manganese oxide.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because in a metal-air cell, the cathode must have a catalyst, and the catalyst is conventionally manganese oxide, as evidenced by Linden, sect. 38.3.2 of *Handbook of Batteries* (2nd ed.).

3. Claims 14-17, 19, 20, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Putt, U.S. Pat. No. 5,458,988, in view of Ward et al., U.S. Pat. No. 6,197,445 B1.

Rejection of claims 14-17, 19, 20, and 26 drawn to a method of making a metal-air battery.

Putt teaches a method of making a metal-air battery by placing a cathode tube in a can of rectangular cross section and an air access opening, placing anode in the can, and sealing a portion of the can over the seal assembly (col . 13, lines 19-25); it also teaches placing a conductive hot melt material between the cathode and can (col. 10, lines 65-67 and col. 11, lines

1-12); placing a barrier layer between the cathode and the can (col. 7, lines 15-21); placing a separator between the cathode and anode (col. 4, lines 10-12; Fig. 2); and connecting the cathode to the can with a tab (col. 11, lines 9-15).

Putt does not teach sealing a portion of the can by crimping the can over the seal assembly; a can having a triangular cross section.

Ward et al., teach a metal-air cell, the method comprising crimping the can (col. 2, lines 49-52), wherein the cell may be rectangular, or any polygonal cross-section (triangular) (col. 7, lines 28-35).

Thus, it would have been obvious at the time the invention was made to insert the teachings of Ward et al., into the teachings of Putt because Ward et al, teach a method of crimping, which would provide increased security from leakage of the electrolyte from the cell. In addition, Ward et al., teach that metal-air cells "can have a variety of cross-sectional shapes, including any closed-perimeter cross-section." (col. 7, lines 28-35). This variety of cross-sections provides more flexibility in the application of the metal-air battery.

4. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Putt, U.S. Pat. No. 5,458,988, in view of Ward et al., U.S. Pat. No. 6,197,445 B1.

Rejection of claims 21-25 drawn to a battery.

Putt teaches a battery comprising a can having a rectangular cross section (col. 3, lines 39-41), the can having a cathode, an anode, and a separator between the cathode and anode (col. 4, lines 10-16); and a seal assembly attached to the open end of the can (col. 11, lines 40-51); air

access opening (col. 3, lines 39-44); the battery is a metal-air battery (col. 4, lines 60-64).

Putt does not teach the cathode comprises manganese oxide; nor does it teach a can having a triangular cross section.

Ward et al., teach a metal-air cell, the method comprising crimping the can (col. 2, lines 49-52), wherein the cell may be rectangular, or any polygonal cross-section (triangular) (col. 7, lines 28-35).

5. Thus, it would have been obvious at the time the invention was made to insert the teachings of Ward et al., into the teachings of Putt because Ward et al, teach that metal-air cells "can have a variety of cross-sectional shapes, including any closed-perimeter cross-section." (col. 7, lines 28-35). This variety of cross-sections provides more flexibility in the application of the metal-air battery. In addition, in a metal-air cell, the cathode must have a catalyst, and the catalyst is conventionally manganese oxide, as evidenced by Linden, sect. 38.3.2 of *Handbook of Batteries* (2nd ed.).

Allowable Subject Matter

6. Claims 9 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The Applicant claims a metal-air battery comprising a non-conductive melt between the cathode and the seal assembly.

The prior art of record does not suggest a non-conductive melt between the cathode and the seal assembly.

Examiner Correspondence

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Angela J. Martin whose telephone number is (703) 305-0586. The Examiner can normally be reached on Monday - Friday from 8:00am to 4:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Patrick Ryan, can be reached at (703) 308-2383.

In order to transmit an official fax/non-final, the number is (703) 872-9310. In order to transmit an official fax/after final, the number is (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

AJM